Burning And Suppression of Solids (BASS)

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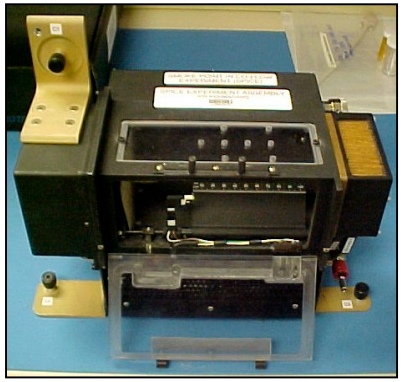
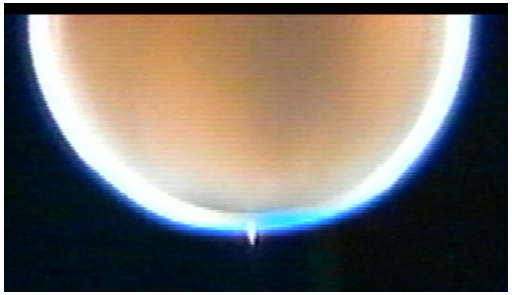
Objective:

- BASS will bridge the gap between normal gravity NASA-STD-6001 Test # 1 method, ground based microgravity tests, and actual material flammability in microgravity.
- BASS will assess the effectiveness of an inert, gaseous extinguishing agent (similar to that used on ISS) in putting out flames over different materials, geometries, and flow.



SPICE Experiment Assembly



1g buoyant burning of PMMA sphere, ignited at the stagnation region.

Relevance/Impact:

- Relationship between ground test and microgravity test can be investigated by observing flames burning for longer times.
- Practical, realistic fuels in typical geometries will be examined, including wake flames which have characteristics of a fire burning behind another object.

Development Approach:

- BASS will utilize the on orbit hardware SPICE which was launched on STS-126 and operates on ISS.
- Engineering model hardware used for testing purposes.
- Crew required to set up and operate the experiment. Video and data down-linked to the ground for evaluation.
- BASS is scheduled to launch on Shuttle flight ULF-5 and operated during Inc 23-24 on board ISS in the Microgravity Science Glovebox facility.

ISS Resource Requirements

Accommodation (carrier)	Microgravity Science Glovebox
Upmass (kg) (w/o packing factor)	20
Volume (m^3) (w/o packing factor)	0.096
Power (kw) (peak)	0.05
Crew Time (hrs) (installation/operations)	25 hours crew time
Autonomous Ops (hrs)	N/A (all hands on crew ops)
Launch/Increment	ULF-5/Inc 23-24

Revision Date: 10/13/2009

Project Life Cycle Schedule

Milestones	SCR	RDR	PDR	CDR	VRR	Flt Safety	FHA	Launch	Ops	Return	Final Report
Actual/ Baseline	N/A	N/A	N/A	8/1999	N/A	2/2010	5/2010	9/2010	Inc. 23.24	OPS + 4 m	Return +12m
Documentation	Website:http://spaceflightsystems.grc.nasa.gov/Advanced/ISSResearch/MSG/SPICE eRoom:https://collaboration.grc.nasa.gov/eRoom/NASAc1f1/ISSHumanResearchProjectsOffice				SRD:same as SPICE project website EDMP:http://edmp.grc.nasa.gov			Project Plan:https://collaboration.grc.nasa.gov/eRoom/NASAc1f1/ISSResearchProject/0_d1bde SEMP:			